**AP Statistics- Ch. 27 Classwork Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

1. GPA vs. ACT. A high school counselor was interested in finding out how well student GPAs predicts ACT scores. A random sample of 15 members of the senior class was taken and GPAs and ACT scores recorded. The analysis of the data is shown below.







1. Is there evidence of an association between GPA and ACT score? **Specifically, do higher GPAs relate to higher ACT scores?** Test an appropriate hypothesis and state your conclusion in the proper context.
2. Create and interpret a 95% confidence interval for the slope of the population regression line.
3. What is the correlation of GPA and ACT scores?
4. Is our linear model a good fit for our data? Use the scatterplot, residual plot, and correlation in your answer
5. Describe the scatterplot of GPA vs. ACT.
6. What is the predicted ACT score for someone who has a GPA of 3.25?
7. If we are told that the student that had a GPA of 3.25 received a score of 24 on the ACT, what is their residual?
8. Get the group “CW27” and ungroup it. You should have lists LMID and LHMWK. These are lists of Homework and Midterm exam scores for a random sample of 61 college freshman in an Introductory Statistics course.
   1. Test to see if there is an association between Homework grades and Midterm grades for Intro Stat students.
   2. If you do find an association, complete a 90% confidence interval for the slope of the population regression line between Homework and Midterm Grades.